

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 April 2004 (29.04.2004)

PCT

(10) International Publication Number
WO 2004/036269 A2

- (51) International Patent Classification⁷: **G02B**
- (21) International Application Number: PCT/US2003/033288
- (22) International Filing Date: 17 October 2003 (17.10.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/419,546 18 October 2002 (18.10.2002) US
- (71) Applicants (*for all designated States except US*): BAE SYSTEMS INFORMATION AND ELECTRONIC SYSTEMS INTEGRATION INC. [US/US]; 65 Spit Brook Road Nhq01-719, Nashua, NH 03061 (US). THALES OPTICS LTD [GB/GB]; Glascoed Road, St Asaph, Denbighshire LL17 0LL (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): GUYER, Robert, C. [US/US]; 24 Pickman Road, Beverly, MA 01915 (US). KIRKHAM, Anthony [GB/GB]; Glascoed Road, St. Asaph, Denbighshire LL17 0LL (GB).
- (74) Agent: LONG, Daniel, J.; Bae Systems Information and Electronic Systems Integration Inc., 65 Spit Brook Road, NHQ01-719, Nashua, NH 03061 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— *without international search report and to be republished upon receipt of that report*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: METHOD AND APPARATUS OF USING OPTICAL DISTORTION IN A DIRECTED COUNTERMEASURE SYSTEM TO PROVIDE A VARIABLE FIELD OF VIEW

(57) **Abstract:** A single, hard-mounted set of optics is utilized to replace a two field-of-view system for directed countermeasures. It includes within one continuous but distorted field of view the capability to detect, acquire and characterize targets at the edge of the field while precisely tracking with high target fidelity at the field center. With multiple targets, both tracking of a primary target and acquisition of a secondary target can occur simultaneously, greatly improving countermeasure effectiveness.